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UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

~~SOIL AND WATER CONSERVATION RESEARCH DIVISION~~

~~RIO GRANDE SOIL AND WATER RESEARCH CENTER~~

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September 7, 1973

Subject: Progress Report No. 3 (August, 1973) for Investigation No. 356
(Contract T-4105B).

To: NASA, Lyndon B. Johnson Spacecraft Center
Attn: Ryborn R. Kirby

The monthly progress report for August is as follows:

We received the SL-2 EREP MSS images of channels 2, 7, and 11 on August 9 and requested the CCT of Starr County on August 10.

On August 13 the EREP S 190A photoproducts (frames 46 through 54) were received from SL-2, revolution 233, May 30, 1973. Comments on the various film types are as follows:

Camera No. 1, EK 2424, 0.7 - 0.8 nm -- The images for water and land differ widely; water has a light tone and bare soil has the darkest tone with vegetation in between.

Camera No. 2, EK 2424, 0.8 - 0.9 nm -- The images are very similar to those for camera No. 1. The contrast among water, bare soil and vegetation gives visible appearance of being greater.

Camera No. 5, Panatomic X, SO 22, 0.6 - 0.7 nm -- The images are very clear and the contrast among water, bare soil, and vegetation is about the same as for camera No. 2. The images are "sharper," however. Towns and cities stand out very well. Cultural practices in rangeland are rather marked.

Camera No. 6, Panatomic X, SO 22, 0.5 - 0.6 nm -- Images are less sharp than from camera No. 5 but seem to have more levels of optical density in the bare soils than the other films. Is good film for looking at water bodies. Roads, canals, and reservoirs are well distinguished from surroundings.

Camera No. 4, Aerial color, SO 356, 0.4 - 0.7 nm -- Images are very sharp considering the effect haze has on this film type. Soil color differences are very marked. Bare soil, vegetation, and water contrast well. However, tone differences within vegetation are almost nonexistent.

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CAMERA PHOTOGRAPHY] Progress Report,
Aug. 1973 (Agricultural Research Service)
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Camera No. 3, color IR, SO 172, 0.5 - 0.88 nm -- Not as sharp as conventional color for landmark differentiation and location. Tone differences among soils are very subtle. Contrast among bare soil, vegetation, and water is also small. There are some red tone variations that should register differences in vegetation density.

On August 10 we were informed by the PI MO that Site 32 would be covered by the Astronauts on Aug. 12. Aug. 12 was quite cloudy; on Aug. 13 Mr. Kirby informed us the first land the Astronauts were able to see was Padre Island but that the satellite had passed right over our prime site, Cameron County.

On August 24 we mailed a Data Processing Requirements Form for Mission 238, site 32 (flown 5/29/73) to the Aircraft Application Branch. The request would have been mailed earlier had we understood clearly the procedure for ordering EREP aircraft support data. Photomosaics of the flight lines covered on Mission 238 are partially completed. These will be studied for vegetation indicators of degree and extent of salinity and for selecting areas that are spectrally fairly homogeneous and large enough to distinguish (40 acres) in satellite CCT data. The flight line photo-mosaics will also be compared with generalized soil maps of Cameron and Starr Counties that indicate where saline soil phases occur. These inputs will guide the verification soil sampling (of ground conditions) and should assist in obtaining sites that are spectrally representative of county salinity conditions.

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